

Markey-Substitute (as modified)

CAN24850 TCH

S.L.C.

Edward J. Markey

AMENDMENT NO. \_\_\_\_\_ Calendar No. \_\_\_\_\_

Purpose: In the nature of a substitute.

**IN THE SENATE OF THE UNITED STATES—118th Cong., 2d Sess.**

**S. 2645**

To reduce the health risks of heat by establishing the National Integrated Heat Health Information System within the National Oceanic and Atmospheric Administration and the National Integrated Heat Health Information System Interagency Committee to improve extreme heat preparedness, planning, and response, requiring a study, and establishing financial assistance programs to address heat effects, and for other purposes.

Referred to the Committee on \_\_\_\_\_ and  
ordered to be printed

Ordered to lie on the table and to be printed

AMENDMENT IN THE NATURE OF A SUBSTITUTE intended  
to be proposed by Mr. MARKEY

Viz:

- 1 Strike all after the enacting clause and insert the fol-
- 2 lowing:
- 3 **SECTION 1. SHORT TITLE.**
- 4 This Act may be cited as the “Preventing Health
- 5 Emergencies And Temperature-related Illness and Deaths
- 6 Act of 2024” or the “Preventing HEAT Illness and
- 7 Deaths Act of 2024”.

1 **SEC. 2. DEFINITIONS.**

2 In this Act:

3 (1) **EXTREME HEAT.**—The term “extreme  
4 heat” means heat that substantially exceeds local  
5 temperature norms in terms of any combination of  
6 the following:

7 (A) Duration.

8 (B) Intensity.

9 (C) Season length.

10 (D) Frequency.

11 (2) **HEAT.**—The term “heat” means any com-  
12 bination of the atmospheric parameters associated  
13 with modulating human thermoregulation, such as  
14 air temperature, humidity, solar exposure, and wind  
15 speed.

16 (3) **HEAT EVENT.**—The term “heat event”  
17 means an occurrence of extreme heat of 2 days or  
18 more that may have heat-health implications.

19 (4) **HEAT-HEALTH.**—The term “heat-health”  
20 means health effects to humans from heat, during or  
21 outside of heat events, including from vulnerability  
22 and exposure, or the risk of such effects.

23 (5) **PLANNING.**—The term “planning” means  
24 activities performed across timescales (including  
25 days, weeks, months, years, and decades) with sce-  
26 nario-based, probabilistic or deterministic informa-

1 tion to identify and take actions to proactively miti-  
2 gate heat-health risks.

3 (6) PREPAREDNESS.—The term “preparedness”  
4 means activities performed across timescales with  
5 decision support tools to manage risk in advance of  
6 a heat event and increased ambient temperature.

7 (7) TRIBAL GOVERNMENT.—The term “Tribal  
8 government” means the recognized governing body  
9 of any Indian or Alaska Native tribe, band, nation,  
10 pueblo, village, community, component band, or com-  
11 ponent reservation, individually identified (including  
12 parenthetically) in the list published most recently as  
13 of the date of enactment of this Act pursuant to sec-  
14 tion 104 of the Federally Recognized Indian Tribe  
15 List Act of 1994 (25 U.S.C. 5131).

16 **SEC. 3. NATIONAL INTEGRATED HEAT HEALTH INFORMA-**  
17 **TION SYSTEM INTERAGENCY COMMITTEE.**

18 (a) ESTABLISHMENT OF COMMITTEE.—There is es-  
19 tablished within the National Oceanic and Atmospheric  
20 Administration an interagency committee, to be known as  
21 the “National Integrated Heat Health Information Sys-  
22 tem Interagency Committee” (in this section referred to  
23 as the “Committee”).

24 (b) PURPOSE.—The Committee shall coordinate  
25 agencies represented on the Committee to execute, as ap-

1 appropriate, activities across such agencies to ensure a  
2 united Federal approach to reducing health risks from  
3 heat.

4 (c) MEMBERSHIP.—

5 (1) IN GENERAL.—In order to carry out and  
6 achieve the purpose described in subsection (b), the  
7 Committee shall include the following:

8 (A) The Director of the National Inte-  
9 grated Heat Health Information System.

10 (B) Not fewer than 1 representative from  
11 each of the following:

12 (i) From the Department of Com-  
13 merce, the following:

14 (I) From the National Oceanic  
15 and Atmospheric Administration, the  
16 following:

17 (aa) The National Weather  
18 Service.

19 (bb) The Office of Oceanic  
20 and Atmospheric Research.

21 (cc) The National Environ-  
22 mental Satellite, Data, and Infor-  
23 mation Service.

24 (II) The National Institute of  
25 Standards and Technology.

1 (III) The Bureau of the Census.

2 (ii) From the Department of Health

3 and Human Services, the following:

4 (I) The Centers for Disease Con-

5 trol and Prevention, including the Na-

6 tional Institute for Occupational Safe-

7 ty and Health.

8 (II) The Office of the Assistant

9 Secretary of Health and Human Serv-

10 ices for Preparedness and Response.

11 (III) The Substance Abuse and

12 Mental Health Services Administra-

13 tion.

14 (IV) The National Institutes of

15 Health.

16 (V) The Indian Health Service.

17 (iii) From the Department of the In-

18 terior, the following:

19 (I) The Bureau of Indian Affairs.

20 (II) The Bureau of Land Man-

21 agement.

22 (III) The National Park Service.

23 (iv) From the Environmental Protec-

24 tion Agency, the following:

1 (I) The Office of Air and Radi-  
2 ation, if the Administrator of the En-  
3 vironmental Protection Agency deter-  
4 mines appropriate.

5 (II) The Office of Research and  
6 Development, if the Administrator de-  
7 termines appropriate.

8 (III) The Office of International  
9 and Tribal Affairs.

10 (v) The Federal Emergency Manage-  
11 ment Agency.

12 (vi) The Department of Defense.

13 (vii) The Department of Agriculture.

14 (viii) The Department of Housing and  
15 Urban Development.

16 (ix) The Department of Transpor-  
17 tation.

18 (x) The Department of Energy.

19 (xi) The Department of Labor, includ-  
20 ing the Occupational Safety and Health  
21 Administration.

22 (xii) The Department of Veteran Af-  
23 fairs.

24 (xiii) The Department of Education.

25 (xiv) The Department of State.

1 (xv) The United States Agency for  
2 International Development.

3 (xvi) Such other Federal agencies as  
4 the Under Secretary of Commerce for  
5 Oceans and Atmosphere considers appro-  
6 priate.

7 (2) SELECTION OF REPRESENTATIVES.—The  
8 head of an agency specified in paragraph (1)(B)  
9 shall, in appointing representatives of the agency to  
10 the Committee, select representatives who have ex-  
11 pertise in areas relevant to the responsibilities of the  
12 Committee, such as weather prediction, health im-  
13 pacts, behavioral science, public health hazard pre-  
14 paredness and response, or mental health services.

15 (3) CO-CHAIRS.—

16 (A) IN GENERAL.—The members of the  
17 Committee shall select 3 individuals from  
18 among such members to serve as co-chairs of  
19 the Committee, subject to the approval of the  
20 Under Secretary of Commerce for Oceans and  
21 Atmosphere.

22 (B) SELECTION.—

23 (i) INITIAL SELECTION.—Of the co-  
24 chairs first selected, one shall be from the  
25 National Oceanic and Atmospheric Admin-

1                   istration, one shall be from the Depart-  
2                   ment of Health and Human Services, and  
3                   one shall be from the Federal Emergency  
4                   Management Agency.

5                   (ii) SUBSEQUENT SELECTION.—Sub-  
6                   sequent co-chairs shall be selected from  
7                   among the members of the Committee, ex-  
8                   cept the National Oceanic and Atmospheric  
9                   Administration shall have the opportunity  
10                  to maintain a co-chair position.

11                  (C) TERMS.—Each co-chair shall serve for  
12                  a term of not more than 5 years.

13                  (D) RESPONSIBILITIES OF CO-CHAIRS.—  
14                  The co-chairs of the Committee shall, in con-  
15                  sultation with the Director of the National Inte-  
16                  grated Heat Health Information System—

17                         (i) determine the agenda of the Com-  
18                         mittee, in consultation with other members  
19                         of the Committee;

20                         (ii) direct the work of the Committee;  
21                         and

22                         (iii) convene meetings of the Com-  
23                         mittee not less frequently than once each  
24                         fiscal quarter.



1 (d) RESPONSIBILITIES OF COMMITTEE.—The Com-  
2 mittee shall coordinate an integrated, Federal Govern-  
3 ment-wide approach to reducing health risks and impacts  
4 of heat, including by—

5 (1) developing the strategic plan required by  
6 subsection (e);

7 (2) coordinating across Federal agencies on  
8 heat-health communication, engagement, research,  
9 service delivery, and workforce development; and

10 (3) building capacity and partnerships with  
11 Federal and non-Federal entities.

12 (e) STRATEGIC PLAN.—

13 (1) IN GENERAL.—Not later than 2 years after  
14 the date of the enactment of this Act, the Committee  
15 shall submit to Congress and make available on a  
16 public website a 5-year strategic plan that outlines  
17 the goals and projects of the Committee, including  
18 how the Committee will improve coordination and in-  
19 tegration of interagency Federal capacity and capa-  
20 bilities to address health risks of heat, including—

21 (A) a strategy for improving and coordi-  
22 nating existing Federal data collection and data  
23 management to include sharing of data and sta-  
24 tistics on heat-related illnesses and mortalities

1 and other impacts to inform heat-related activi-  
2 ties;

3 (B) a strategy for improving and coordi-  
4 nating Federal activities to understand user  
5 gaps and needs, conduct research, foster inno-  
6 vative solutions, and provide actionable infor-  
7 mation and services; and

8 (C) mechanisms for financing heat plan-  
9 ning and preparedness within such agencies as  
10 the Committee considers appropriate.

11 (2) IMPLEMENTATION.—The head of an agency  
12 represented on the Committee may implement the  
13 portions of the strategic plan required by paragraph  
14 (1) that are relevant to that agency.

15 (3) UPDATES.—Not later than 5 years after the  
16 submission of the strategic plan required by para-  
17 graph (1), and every 5 years thereafter, the Com-  
18 mittee shall brief Congress on an update of the plan,  
19 which shall include progress made toward goals out-  
20 lined in the previous plan and new priorities that  
21 emerge.

22 (f) CONSULTATION.—In carrying out the responsibil-  
23 ities of the Committee, the Committee shall consult with  
24 relevant—

- 1 (1) regional, State, Tribal, and local govern-  
2 ments;
- 3 (2) international organizations and partners;
- 4 (3) research institutions;
- 5 (4) nongovernmental organizations and associa-  
6 tions;
- 7 (5) medical experts with expertise in emergency  
8 response; and
- 9 (6) environmental health, economic or business  
10 development, or other stakeholders.

11 **SEC. 4. NATIONAL INTEGRATED HEAT HEALTH INFORMA-**  
12 **TION SYSTEM.**

13 (a) ESTABLISHMENT.—The Under Secretary of Com-  
14 merce for Oceans and Atmosphere shall establish within  
15 the National Oceanic and Atmospheric Administration a  
16 system, to be known as the “National Integrated Heat  
17 Health Information System” (NIHHIS) (in this section  
18 referred to as the “System”).

19 (b) PURPOSE.—The purpose of the System is to re-  
20 duce heat-related impacts by—

- 21 (1) improving the delivery of data, information,  
22 forecasts, warnings, predictions, and projections re-  
23 lated to temperature and extreme heat and related  
24 impacts;

1           (2) through the Office of Oceanic and Atmos-  
2           pheric Research, developing science-based solutions  
3           and tools to improve impact-based decision support  
4           services for heat impacts to human life, property,  
5           and the United States economy; and

6           (3) supporting a research program on heat  
7           health, in coordination with the agencies represented  
8           on the National Integrated Heat Health Information  
9           System Interagency Committee.

10          (c) DATA MANAGEMENT.—

11           (1) AVAILABILITY.—The data and metadata as-  
12           sociated with the System shall be fully and openly  
13           available, within the legal right to redistribute, in ac-  
14           cordance with chapter 31 of title 44, United States  
15           Code (commonly known as the “Federal Records Act  
16           of 1950”), and the Federal Evidence-Based Policy-  
17           making Act of 2018 (Public Law 115–435;132 Stat.  
18           5529) and the amendments made by that Act, to  
19           maximize use of such data to support the goals of  
20           the System.

21           (2) NATIONAL CENTERS FOR ENVIRONMENTAL  
22           INFORMATION.—

23           (A) IN GENERAL.—The Under Secretary of  
24           Commerce for Oceans and Atmosphere shall  
25           manage, maintain, and steward archival data

1 and metadata associated with the System with-  
2 in the National Centers for Environmental In-  
3 formation.

4 (B) WARNING COORDINATION METEOROLO-  
5 GIST.—The Under Secretary of Commerce for  
6 Oceans and Atmosphere shall designate at least  
7 one warning coordination meteorologist, as de-  
8 scribed in section 405 of the Weather Research  
9 and Forecasting Innovation Act of 2017 (15  
10 U.S.C. 8545), at the National Centers for Envi-  
11 ronmental Information.

12 **SEC. 5. STUDY ON EXTREME HEAT INFORMATION AND RE-**  
13 **SPONSE.**

14 (a) STUDY.—

15 (1) IN GENERAL.—Not later than 120 days  
16 after the date of the enactment of this Act, the  
17 Under Secretary of Commerce for Oceans and At-  
18 mosphere, in consultation with the National Inte-  
19 grated Heat Health Information System Interagency  
20 Committee and the individuals and entities described  
21 in section 3(f), shall seek to enter into an agreement  
22 with the National Academies of Sciences, Engineer-  
23 ing, and Medicine, or another appropriate external  
24 entity, to conduct a study on extreme heat informa-

1 tion and response, to be completed not later than 3  
2 years after such date of enactment.

3 (2) ELEMENTS.—The study described in para-  
4 graph (1) shall—

5 (A) identify policy and research gaps,  
6 which may include—

7 (i) regions of the United States with  
8 the largest gaps between awareness, pre-  
9 paredness, and capacity to address extreme  
10 heat; and

11 (ii) heat-related gaps in data, such  
12 as—

13 (I) the number of schools,  
14 carceral facilities, and other public fa-  
15 cilities that lack air conditioning;

16 (II) the demographic breakdown  
17 of people affected by heat events;

18 (III) medical coding in health  
19 care facilities (such as hospitals,  
20 emergency rooms, and health centers)  
21 that indicate heat-related illnesses  
22 (such as kidney failure, dehydration,  
23 and fainting spells); and

24 (IV) with respect to public policy  
25 at the State and community level that

1 enhance vulnerabilities to extreme  
2 heat (such as conditions and thresh-  
3 olds related to heat-health issues);

4 (B) provide recommendations for address-  
5 ing gaps with respect to policy, research, oper-  
6 ations, communications, and data, including the  
7 gaps identified under subparagraph (A), affect-  
8 ing heat-health planning, preparedness, re-  
9 sponse, resilience, and adaptation;

10 (C) provide such other recommendations as  
11 the Director considers appropriate, which may  
12 include strategies for—

13 (i) communicating warnings to and  
14 providing impact-based decision support to  
15 promote preparedness actions and resil-  
16 ience of populations vulnerable to extreme  
17 heat, including to individuals who may  
18 have barriers to such information;

19 (ii) understanding compound and cas-  
20 cading risks, and implementing alternative  
21 heat-health risk reduction interventions to  
22 manage those risks collectively, such as re-  
23 ducing risk of the transmission of infec-  
24 tious diseases during heat waves by cre-  
25 ating outdoor cooling locations or increas-

1 ing ventilation and filtration in indoor cool-  
2 ing centers;

3 (iii) addressing the impacts of extreme  
4 heat on energy cost, affordability, and reli-  
5 ability for residential and commercial in-  
6 frastructure (such as weatherization, en-  
7 ergy costs, electric power systems, and  
8 water supply and treatment systems); and

9 (iv) developing standards or heat-  
10 health mitigation strategies for populations  
11 vulnerable to extreme heat; and

12 (D) consider such other subjects as the  
13 Committee considers appropriate, which may in-  
14 clude—

15 (i) the feasibility of enhancing and  
16 standardizing existing nationwide data col-  
17 lection on heat-related illnesses and mor-  
18 talities to improve and ensure consistent  
19 collection of national-level heat illness data  
20 across all 50 States, territories, and local  
21 jurisdictions of the United States;

22 (ii) mechanisms for financing heat  
23 preparedness; and

24 (iii) the effectiveness of county- or  
25 local-level heat awareness and communica-



1                   tion approaches, heat action, and tools,  
2                   preparedness plans, or mitigation.

3                   (3) DEVELOPMENT OF DEFINITIONS.—Fol-  
4                   lowing the study described in paragraph (1), the  
5                   Committee shall work with heat experts across dis-  
6                   ciplines to comprehensively identify impacts of in-  
7                   creased heat to inform consistent and agreed upon  
8                   definitions for heat events, heat waves, and other  
9                   relevant terms.

10                  (b) REPORT.—Not later than 90 days after the com-  
11                  pletion of the study described in subsection (a)(1), the  
12                  Committee shall—

13                   (1) make available to the public on a Federal  
14                   internet website of the National Oceanic and Atmos-  
15                   pheric Administration a report on the findings and  
16                   conclusions of the study; and

17                   (2) submit the report to—

18                           (A) the Committee on Commerce, Science,  
19                           and Transportation of the Senate;

20                           (B) the Committee on Health, Education,  
21                           Labor, and Pensions of the Senate;

22                           (C) the Committee on Science, Space, and  
23                           Technology of the House of Representatives;

24                           (D) the Committee on Energy and Com-  
25                           merce of the House of Representatives; and

1 (E) the Committee on Education and  
2 Labor of the House of Representatives.

3 **SEC. 6. FINANCIAL ASSISTANCE FOR RESILIENCE IN AD-**  
4 **DRESSING EXTREME HEAT AND HEALTH**  
5 **RISKS.**

6 (a) IN GENERAL.—

7 (1) ESTABLISHMENT.—Not later than 1 year  
8 after the date of the enactment of this Act, the Di-  
9 rector of the National Integrated Heat Health Infor-  
10 mation System may, in coordination with the Na-  
11 tional Integrated Heat Health Information System  
12 Interagency Committee, establish and administer a  
13 community heat resilience program to provide finan-  
14 cial assistance to eligible entities to carry out  
15 projects described in subsection (e) to ameliorate  
16 human health impacts of extreme heat events.

17 (2) REVISION.—Upon completion of the stra-  
18 tegic plan required by section 3(c)(1), the Com-  
19 mittee may revise the community heat resilience pro-  
20 gram to ensure the program aligns with the strategic  
21 plan and is administered in accordance with the  
22 plan.

23 (b) PURPOSE.—The purpose of the financial assist-  
24 ance provided under this section is to improve community

1 resilience to heat and heat-health impacts and further sci-  
2 entific research to address adaptation gaps and priorities.

3 (c) FORMS OF ASSISTANCE.—Financial assistance  
4 provided under this section may be in the form of prizes,  
5 contracts, grants, or cooperative agreements.

6 (d) ELIGIBLE ENTITIES.—Entities eligible to receive  
7 financial assistance under this section to carry out  
8 projects described in subsection (e) include—

9 (1) nonprofit entities;

10 (2) States;

11 (3) Tribal governments;

12 (4) local governments;

13 (5) local workforce development boards; and

14 (6) academic institutions.

15 (e) ELIGIBLE PROJECTS.—Projects described in this  
16 subsection include the following:

17 (1) Projects to reduce heat-health risks, includ-  
18 ing sustainable heat reduction and mitigation solu-  
19 tions such as for cool roofs, cool pavements, urban  
20 forestry or tree plantings and maintenance, the pro-  
21 vision of shade, cooling and resilience centers, retro-  
22 fitting buildings for cooling, improving the resilience  
23 of the power grid to ensure reliable air conditioning,  
24 energy efficiency, acquisitions or upgrades of filtra-  
25 tion systems or high-efficiency air conditioning sys-

1       tems, and strategies to improve community-level re-  
2       sponse before and during a heat event.

3           (2) Training programs to support the develop-  
4       ment and integration of education and training pro-  
5       grams for identifying and addressing risks associ-  
6       ated with climate change for vulnerable individuals.

7           (3) Projects focused on being responsive to  
8       heat-related needs of communities identified through  
9       engagements at different geographic scales (national  
10      to regional to local), including—

11           (A) to expand public awareness of heat  
12      risks;

13           (B) to conduct community-based heat-  
14      health observational campaigns;

15           (C) to conduct scientific research to assess  
16      and address gaps and priorities regarding the  
17      risks of extreme heat in communities;

18           (D) to communicate risks and warnings to  
19      isolated communities;

20           (E) to support practices to reduce the risk  
21      of extreme heat illness among workers;

22           (F) to educate such communities about  
23      how to respond to extreme heat events; and

1 (G) to establish local, city, and county heat  
2 planning and heat-related emergency action  
3 plans.

4 (4) Other projects that the Director determines  
5 will achieve a significant reduction in heat risk or in-  
6 creased resilience to increased heat or extreme heat  
7 events.

8 (f) PRIORITIES.—In selecting eligible entities to re-  
9 ceive financial assistance under this section, the Director  
10 shall prioritize entities that will carry out projects that  
11 provide benefits for historically disadvantaged commu-  
12 nities and communities with significant heat disparities  
13 associated with demographics or income.

14 (g) DISTRIBUTION OF ASSISTANCE.—The Director  
15 shall seek to equitably distribute financial assistance pro-  
16 vided under this section based on geographic location or  
17 such other factors as the Director determines appropriate.

18 **SEC. 7. AUTHORIZATION OF APPROPRIATIONS.**

19 (a) NATIONAL INTEGRATED HEAT HEALTH INFOR-  
20 MATION SYSTEM INTERAGENCY COMMITTEE; NATIONAL  
21 INTEGRATED HEAT HEALTH INFORMATION SYSTEM.—  
22 There is authorized to be appropriated to the National  
23 Oceanic and Atmospheric Administration to carry out sec-  
24 tions 3 and 4, including for any administrative costs for  
25 the National Integrated Heat Health Information System

1 Interagency Committee and the National Integrated Heat  
2 Health Information System, \$5,000,000 for each of fiscal  
3 years 2025 through 2029.

4 (b) STUDY ON EXTREME HEAT INFORMATION AND  
5 RESPONSE.—There is authorized to be appropriated to  
6 the National Oceanic and Atmospheric Administration to  
7 contract with the National Academies of Sciences, Engi-  
8 neering, and Medicine, or other entity, to carry out section  
9 5 \$500,000 for each of fiscal years 2025 through 2027.

10 (c) FINANCIAL ASSISTANCE FOR RESILIENCE IN AD-  
11 DRESSING EXTREME HEAT AND HEALTH RISKS.—There  
12 is authorized to be appropriated to the National Oceanic  
13 and Atmospheric Administration to carry out section 6  
14 \$1,500,000 for each of fiscal years 2025 through 2029.